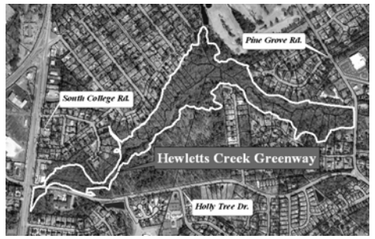
Hewletts Creek Greenway: An Opportunity for Residents

Hewletts Creek is experiencing intense development and subsequent water quality impairments such as high levels of nutrients, sediment and fecal coliform bacteria. As urbanization continues, the preservation of remaining open space is increasingly essential.

An existing 55-acre stretch of undeveloped land borders the upper tributary of the middle branch of Hewletts Creek. This reach, also known as Toomers Creek, represents an increasingly rare, but once typical environment, characterized by a distinct flood plain, steep side slopes, bottom wetlands and wooded uplands. This natural greenway, spanning from Pine Grove Drive to the intersection of Holly Tree Drive and South College Road, biologically treats upland runoff and is crucial to the protection and improvement of Hewletts Creek (see map). The entire greenway area, determined by topography and hydrology, consists of portions of 47 privately-owned parcels and ranges in width from 35 to 500 feet.



The New Hanover Soil and Water Conservation District (NHSWCD), in partnership with the New Hanover County Tidal Creeks Program and the City of Wilmington, is working towards the conservation of this "Hewletts Creek Greenway". NHSWCD has recently submitted a NC Clean Water Management Trust Fund grant proposal to purchase a .79 acre parcel, currently owned by the YWCA, at the intersection of S. College Road and Holly Tree Drive. This parcel marks the beginning of the Greenway. Initial communication and negotiations have also begun with several landowners along the Greenway.

This is a great opportunity for residents along the Greenway to receive significant tax benefits by voluntarily placing a conservation easement on the portions of their land within the Greenway boundaries. By doing so, you will be part of the solution to storm water pollution and will help preserve and protect Hewletts Creek for generations to come. Please call the New Hanover Soil and Water Conservation District (shelly-miller@nc.nacdnet.org) or (910) 798-6032 to participate or for more information.

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UNCW Annual Water Quality Summary inside...

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STORM WATER WATCH

Annual Water Quality Report / Hewletts Creek Issue

Winter/Spring 2004

A Publication of the City of Wilmington's Storm Water Services

Community Action Meeting Focuses Efforts on Hewletts Creek

by Shelly Miller, New Hanover Soil & Water Conservation District

With sounds of local bluegrass from the Hewletts Creek Boys filling the room, over 80 citizens illustrated a united force of concern for the water quality and future of Hewletts Creek. On November 20th, concerned residents came out to learn about the current conditions of Hewletts Creek and the surrounding watershed, to express their ideas and concerns and to learn about ways they could help improve the creek. The diverse crowd, ranging from waterfront homeowners to upland residents, represented a broad cross-section of Hewletts Creek Watershed residents. Local organizations involved in the meeting included the New Hanover Soil and Water Conservation District, the City of Wilmington Storm Water Services, Cape Fear Resource, Conservation & Development, NC Coastal Federation, UNCW, Dewberry Inc., the New Hanover County Tidal Creeks Program, Airlie Gardens and Watershed Education for Communities and Officials.

The meeting included presentations on the history and conditions of the watershed along with its current water quality status. Current protection efforts were highlighted including an oyster restoration project, oyster shell recycling program, preservation of the Hewletts Creek Greenway and an overview of how to prevent storm water pollution at home.

Above all, the most important outcome of the meeting was to hear from Hewletts Creek Watershed residents. Five moderator-led discussion groups tackled issues of concern in the watershed and suggested possible solutions. The main issues expressed by participants included water quality and shellfish harvesting declines due to trash, sediment and bacteria from pet waste, runoff from lawns and golf courses, unenforced environmental regulations, poor drainage and flushing in the creek, sewage, increased/unregulated development and increasing impervious surface coverage.

Major solutions proposed included education, monitoring, storm water management, regulated development, meetings focused on water quality and pet waste for watershed residents, schools, and homeowners associations, sewer treatment and frequent monitoring of sewage pumps, enhanced communication between City and County officials, citizens, and CAMA, creation of a County storm water utility department, increased buffer zones, reduction of impervious surfaces, enforced construction restrictions, better planning, development restrictions in floodplains and mandatory use of best management practices (BMPs).

The Community Action Meeting was a huge success, but it is only the first step to improving the future of Hewletts Creek. There is a large collaborative effort underway to improve the water quality and potential shellfish habitat in this creek, and the community represents a significant partner. Public input will impact future protection efforts which currently include: additional meetings to discuss specific watershed projects, increased school education, workshops and trainings on various conservation practices and opportunities for outreach on a neighborhood level. The New Hanover Soil and Water Conservation District (NHSWCD) is dedicated to protecting water quality throughout New Hanover County and we are optimistic that together, we can save our creeks and waterways for future generations to enjoy. To contact NHSWCD, call (910) 798-6032.

*Visit www.ci.wilmington.nc.us/pubservices/stormwater/PublicationsandReports.htm to view the **Hewletts Creek Watershed Restoration Plan**.

**See page 2 for an in-depth profile of Hewletts Creek.

***See page 4 for information on the Hewletts Creek Greenway.

Earth Day Festival 2004

Saturday
April 24, 2004

Noon-6pm

Hugh MacRae Park

Highlights:
Live music
Displays
Demonstrations
Mini-Workshops
Kids Zone
Food from Tidal Creek Co-op & Mellow Mushroom

For more info call:
762-5606

Inside This Issue

The State of Our Waters

2002-2003 Wilmington Watersheds Project Report

The following water quality summary was furnished by Dr. Michael Mallin of the UNCW Center for Marine Science Research. Dr. Mallin is the lead scientist for the Wilmington Watersheds Project. For more information, visit: http://www.uncwil.edu/cmsr/aquaticecology/laboratory/

Barnards Creek Watershed There was a fecal coliform bacterial pollution problem at all three of the stations sampled with the highest fecal coliform counts at the station on Carolina Beach Rd. Lower Barnard's Creek at River Road had poor water quality in terms of turbidity and low dissolved oxygen and there was increased nitrogen loading at all three stations compared with 2001-2002. Biochemical oxygen demand (BOD) at the River Road station decreased from the previous year.

Bradley Creek Watershed Turbidity was not problematic during 2002-2003. Low dissolved oxygen was an occasional problem in brackish waters of the creek during summer and fall. Elevated nitrogen and phosphorus levels enter the creek in both the north and south branches, but major algal blooms were not seen this sampling period. Fecal coliform bacteria were only sampled at the College Acres station, which proved to be contaminated on 82% of the sampling occasions.

Burnt Mill Creek Watershed Fecal coliform bacteria and low dissolved oxygen are the primary problems in Burnt Mill Creek. A sampling station at Princess Place had substandard dissolved oxygen during 50% of the sampling trips. This station also had very poor microbiological water quality, exceeding the standard for human contact in 11 of 12 samples. The station just upstream of Ann McCrary pond also had severe fecal coliform contamination, exceeding the standard on 92% of sample occasions. The effectiveness of Ann McCrary wet detention pond on Randall Parkway as a pollution control device was not good last year. There were no statistically significant reductions in any of the pollutant parameters due to passage through the pond. All water quality parameters indicated a subsequent worsening of the creek from where it exited the pond to the downstream Princess Place sampling station.

Greenfield Lake Watershed The three tributaries of Greenfield Lake near Lake Branch Drive, Jumping Run Branch and Lakeshore Commons Apartments, all suffered from low dissolved oxygen problems on numerous occasions, as did all three stations within the lake proper. All three of the tributaries also had frequent high fecal coliform counts, in excess of the state standard for human contact waters. The stream near Lakeshore Commons also maintained high nitrate and phosphate concentrations. However, excessive algal blooms were not recorded in the lake in 2002-2003. Generally, nutrient loading was highest at a station (GL-2340) located in the south end that receives several urban and suburban inputs. Fecal coliform bacterial contamination was also prevalent at all in-lake and tributary stations during 2002-2003, increasing over the previous year as a result of the breaking of the drought and increased stormwater runoff.

A large regional wet detention pond on the tributary Silver Stream did a good job of reducing pollutant loads to the lake from this drainage. Statistically significant reductions in orthophosphate, total phosphorus, and conductivity were all realized. However, contrary to previous years, nitrogen and fecal coliform bacteria were not significantly reduced, likely because of construction activities occurring along the lower pond. The design of this pond consists of two interconnected basins containing large amounts of diverse aquatic vegetation, with most inputs directed into the upper basin. This could serve as a potential model for future large pond design.

Hewletts Creek Watershed This creek received higher nitrate loading in its three upper branches compared with last year, due to the end of the drought. One major algal bloom exceeding the State standard occurred in the north branch of the creek near Greenville Loop Road. The middle branch of the creek had the highest nutrient concentrations, largely derived from two golf courses. Low dissolved oxygen was not a problem in 2002-2003. Fecal coliforms were not sampled in Hewletts Creek in 2002-2003, except at a station exiting the Pine Valley Country Club golf course, where the State standard was exceeded 75% of occasions sampled.

Howe Creek Watershed Five stations were sampled in Howe Creek in 2002-2003. The lower creek maintained good water quality. A notable decrease in the number of algal blooms has occurred in Howe Creek below Graham Pond since a wetland enhancement was performed in 1998. In the upper creek there were a few problems with low dissolved oxygen and occasional algal blooms. Fecal coliform bacteria counts were low near the ICW, moderate in mid-creek, and high in the uppermost station.

Smith Creek Watershed Smith Creek had moderate water quality problems as reflected by several parameters. Turbidity and elevated suspended sediments occurred on occasion, and an algal bloom exceeding 30 μg/L of chlorophyll *a* occurred once at the 23rd St. station. Low dissolved oxygen problems occurred 33% of the time and 41% of the time at our two Smith Creek stations. However, BOD levels declined from the previous year.

Whiskey Creek Whiskey Creek had relatively high nutrient loading but generally low chlorophyll *a* concentrations in 2002-2003. There were several incidents of low dissolved oxygen at two of the five stations sampled this year, but high turbidity was not a problem. Fecal coliform bacteria counts were high in the upper north and south stations and moderate in the mid-creek station.

Lower Cape Fear Watershed (Downtown Area) Sampling was continued in the creek draining Greenfield Lake into the Cape Fear River. Fecal coliform concentrations exceeded the state standard for human contact waters on 17% of the sampling occasions during 2002-2003. There was a fish kill here in September 2003 of about 450 individuals.

Hewletts Creek Watershed Water Quality Profile

WATERSHED DESCRIPTION

10 square mile watershed. Runoff from this watershed eventually flows into the Intracoastal Waterway. Hewletts Creek is a tidal creek, affected by daily tide changes.

MAJOR WATERSHED LANDMARKS

Independence Boulevard, Shipyard Boulevard, South College Road, Oleander Drive, Masonboro Loop Road, Municipal Golf Course, Westfield Shopping Mall, Long Leaf Mall and Hugh McCrae Park.

STATE CLASSIFICATION

According to the NC Division of Water Quality, Hewletts Creek is designated as a High Quality SA water, meaning it's intended uses are commercial shellfish harvesting and primary recreation activities such as swimming. Currently, the extreme lower portion of Hewletts Creek is the only area open to shellfish harvesting; all other areas are closed.

CREEK INHABITANTS

Shellfish (oysters, crabs, clams), fish, turtles, great blue herons, egrets, ducks and other waterfowl, macroinvetebrates, etc.

PRIMARY LAND USES

Single and multi-family residences, commercial businesses, schools, golf courses, park, impervious surfaces (roads, parking lots, rooftops).

MAJOR POLLUTANTS AND WATER QUALITY IMPACTS

x ***Fecal Coliform Bacteria*** *(from pet, animal or human waste)*
High counts of fecal coliform bacteria indicate that other harmful pathogens may be present in water. High counts of fecal bacteria means health risks exist for individuals or animals exposed to water through direct contact or through shellfish consumption. NC Shellfish Sanitation has closed major portions of Hewletts Creek to shellfish harvesting due to high fecal coliform bacteria contamination.

x ***Nutrients*** *(from lawn and golf course fertilizer, pet waste, leaking or failing septic systems, sanitary sewer system overflows)* An overabundance of certain nutrients (phosphorous and nitrogen) can stress the aquatic ecosystem and cause harmful algae blooms, low dissolved oxygen levels and fish kills.

x ***Sediment*** (from construction activities, eroding streambanks, bare lawns) Sediment collects in water bodies, leaving less room for water storage which can lead to flooding. Sediment also smothers bottom dwelling aquatic life and fish eggs, clogs fish gills, blocks visibility and sunlight needed by aquatic life and aquatic plants.

HEWLETTS CREEK WATERSHED RESIDENTS TAKE HEED...

✓ Always clean up after your pets (cats included)! Be sure pet waste is sealed in a plastic bag and disposed of in the trash.

✓ Get your soil tested to determine the specific type of fertilizer and nutrients your lawn needs. (You may not need fertilizer). Obtain a ***free*** soil testing kit at the NC Cooperative Extension Service, 6206 Oleander Drive, 452-6393.

✓ Never fertilize before it rains or allow fertilizer to land on paved surfaces. Follow all directions and guidelines.

HEWLETTS CREEK PROTECTION EFFORTS

Long Leaf Creek Stream Bank Stabilization (completed 1998)
This improvement project stablilized 1,500 feet of severely incised stream. The engineering practices used included soil bioengineering techniques and live cuttings.

Park Avenue Street Improvement (completed 2001)
Four bioretention areas were installed to treat runoff from a road improvement project that previously had no treatment for runoff. Infiltration of stormwater runoff into bioretention areas provides the most reliable and highest bacteria removal rate of all the traditional storm water control practices.

Pine Valley Stream Restoration (completed 2001)
Pine Valley, one of the two golf courses located in Hewletts Creek watershed, is a source of nutrient loading. Severe bank erosion of a ditch along the golf course also caused increased turbidity downstream as well as pollutant transport. This project converted approximately 1,000 feet of ditch into a natural stream pattern using stream restoration techniques. Stabilizing and adding vegetation to the streambank allowed more uptake of nutrients and other pollutants by natural vegetation. This was a cooperative project between the City, Pine Valley Country Club, NC Sea Grant, NHC Tidal Creeks program and the NC Wetlands Restoration Program.

Pine Valley Regional Detention Pond *(completed 1990)*
This detention pond has helped to reduce fecal coliform loads by allowing bacteria to settle out, increasing exposure to UV radiation from the sun and increasing predation from microfauna. This pond also provides benefits by trapping nutrients.

FUTURE PROTECTION EFFORTS

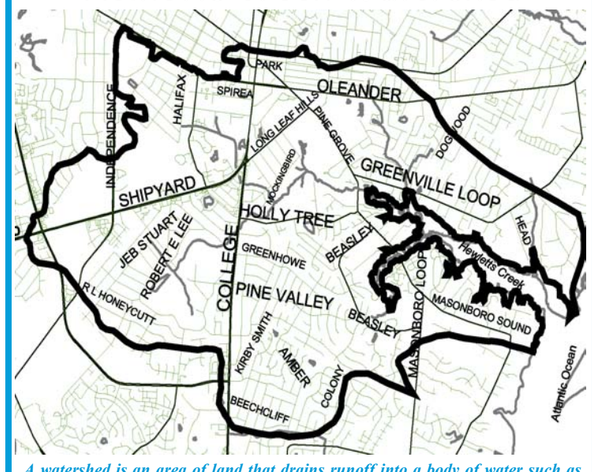
Greenville Loop Road Culvert Replacement
A 50-foot span bridge will replace aging culverts as well as concrete endwalls and a wooden bulkhead that show visible signs of deterioration. This will help increase tidal flushing in the upper portion of Hewletts Creek and provide a long-term solution for adequate drainage at this location. The bridge will also have a center turn lane, 4-foot bike lanes and 4 foot shoulders.

Rileys Branch This project will stabilize severely incised sections of a tributary of Hewletts Creek using bioengineering and vegetative plantings.

Dobo Property Storm Water Management Facility This project is a collaborative effort between the NHC Tidal Creeks Program and the City of Wilmington to establish a regional passive storm water treatment facility on 16.6 acres. This location offers an excellent opportunity to reduce nutrient loading and fecal coliform inputs to Hewletts Creek and aid in controlling flood waters. Plans include construction of a combination wet detention pond/storm water wetland to serve a drainage area of approximately 800 acres and over 1500 homes.

Hewletts Creek Greenway Joint project of New Hanover Soil and Water Conservation District, New Hanover County Tidal Creeks Program and the City of Wilmington to protect and preserve undeveloped natural areas along Hewletts Creek. *See page 4 for a full project description.*

Hewletts Creek Watershed



A watershed is an area of land that drains runoff into a body of water such as a lake, stream or river. On the map, the land area within the dark border is the Hewletts Creek Watershed. This area sheds runoff into Hewletts Creek, then into the Intracoastal Waterway.

Did you know...there are 5,000+ registered dogs in the Hewletts Creek Watershed? That's approximately 3,750 lbs. or 1.9 tons of dog waste generated daily!